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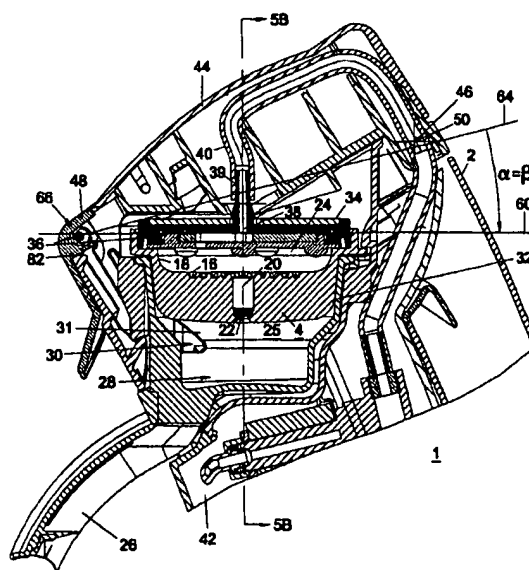
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(54) Title: APPARATUS FOR PREPARING COFFEE



(57) Abstract: The apparatus for preparing coffee comprises a holder arranged for receiving a pouch made of filter material and filled with a product to be extracted. The holder comprises at least one outflow opening and one access opening for placing the pouch in the holder. The apparatus further comprises a cover for closing and releasing the access opening and clamping means for pressing the holder and the cover towards each other when the cover closes off the access opening of the holder.

Title: Apparatus for preparing coffee

 The invention relates to an apparatus for preparing coffee, comprising a holder arranged for receiving a pouch made of filter material and filled with a product to be extracted, the holder comprising at least one outflow opening and one access opening for placing the pouch in the holder, the
5 apparatus further comprising a cover for closing and releasing the access opening and clamping means for pressing the holder and the cover towards each other when the cover closes off the access opening of the holder.

 Such an apparatus is known from the international patent application WO 94/02059. In this publication, the apparatus, as shown in
10 Fig. 11, is provided with clamping means, which engage a circumferential edge of the cover for pressing the cover and the holder towards each other when the cover closes off the holder. A disadvantage of the known apparatus is that the frequent opening and closing of the holder reduces the reliability of the liquid seal between the cover and the holder. When, in use, under high pressure, hot
15 water is supplied to the holder for preparing coffee, it may therefore happen that water leaks from the holder. This is caused by improper closure of the cover and the holder. If water leaks out, even if only to a slight extent, the pressure in the holder decreases. When the pressure in the holder decreases, this leads to a deterioration of the quality of the coffee extract obtained. This is
20 the case in particular when the outflow opening has such a small diameter that the coffee extract spouts from the outflow opening for obtaining coffee with a small-bubble froth layer (café crème). When the pressure decreases, however, it may happen that the speed at which the coffee extract spouts from the outflow opening is not sufficient for preparing café crème.

25 The object of the invention is to provide an apparatus that provides a solution to the above-stated problem. The construction should then be so reliable that even after the holder has frequently been closed and opened again, still a reliable seal between cover and holder can be obtained.

To that end, the apparatus according to the invention is characterized in that the clamping means for pressing the cover and the holder towards each other when the cover closes off the access opening engage at least two mutually different engagement positions located on an external surface of the cover, the cover further comprising a connection located on the external surface of the cover, for the supply of water to the holder, the two mutually different engagement positions each not coinciding with the positions on the external surface where the connection is located, the cover being rotatably connected with the clamping means for rotation over a limited angle about an engagement rotation axis, which engagement rotation axis extends along the two mutually different engagement positions. What is achieved in that the clamping means engage at least two mutually different engagement positions located on an external surface of the cover, is that the engagement positions do not each need to coincide with the position on the external surface where the connection is located, and that, moreover, the cover can be connected to the clamping means for rotation over a limited angle about the engagement rotation axis, the engagement rotation axis extending through the two mutually different engagement positions. The engagement positions can then be used for movably connecting the cover and the clamping means and can moreover be used for pressing the cover and the holder towards each other, when the cover is to close off the access opening of the holder. Preferably, therefore, the cover is movably connected to the clamping means at the two engagement positions. More in particular, the connection is located approximately in the center of the external surface of the cover. In this manner, at a central position, water can be supplied to the holder. In particular, the connection is also located approximately centrally of the at least two engagement positions. Then, the force exerted by the clamping means on the engagement positions of the cover when the cover closes off the holder can be equivalent to a force exerted by the clamping means on the

holder at a position coinciding with the center of the cover, where the connection is preferably located.

This has as a result that a good liquid seal between the cover and the holder is obtained at all times. To that end, in particular, the external
5 surface is of at least substantially circular design.

According to a preferred embodiment of the apparatus, the apparatus further comprises a housing to which the holder is detachably connected, the clamping means comprising a rotation element with a first and a second opposite end, the rotation element adjacent its first end being
10 rotatably connected to the housing for rotation about a horizontally directed first rotation axis between a first and a second rotational position, for closing off the access opening of the holder in the second rotational position, and releasing the access opening again in the first rotational position, the apparatus further comprising a closing arrangement for detachably connecting
15 the rotation element, adjacent the second end, with the housing when the cover in the second rotational position closes off the access opening, the cover being attached to the rotation element such that in the second rotational position, the rotation axis extends along a first side of the cover and the second end is located on a second side of the cover, located opposite the first side.

20 According to a first further elaboration of this embodiment, the first rotation axis is located above a flat plane through the access opening of the holder. An advantage of this embodiment is that the housing can have a relatively narrow design. In this connection, the apparatus can be further characterized in that the plane defined by the first rotation axis and the
25 second end and the plane through the opening include an acute angle when the cover closes off the holder in the second rotational position.

In particular, the cover is movably connected to the rotation element, so that the cover, when the holder is being closed, can optimally position itself relative to the holder.

According to a further elaboration, the engagement rotation axis runs at least substantially parallel to the first rotation axis. When during closure of the cover a part of the edge of the cover initially engages the holder, it is possible, upon further rotation of the rotation element about the first rotation axis, for the cover to simultaneously rotate through a limited angle about the engagement rotation axis. This ensures that the cover is positioned optimally relative to the holder, that is, the cover is positioned such that it seals the holder liquid-tightly. To guarantee, when closing the holder, that the cover and the holder initially engage each other at one point only, the apparatus preferably further comprises spring means which exert such a force on the cover that an underside of the cover comes to lie approximately parallel to the plane defined by the first rotation axis and the second end by rotation of the rotation element about the engagement rotation axis when the cover is lifted off the holder by rotation of the rotation element about the first rotation axis.

According to a highly advantageous embodiment, the spring means comprise a flexible hose which is attached to the cover for supplying hot water to the holder. The flexible hose then has a double function.

The invention will be further elucidated on the basis of the drawing.

In the drawing:

Fig. 1 shows a cross section of a first embodiment of an apparatus according to the invention, in which a holder is closed by a cover;

Fig. 2 shows a cross section of the apparatus according to Fig. 1 upon a first step towards opening the holder;

Fig. 3 shows a cross section of the apparatus according to Fig. 1 upon a second step towards opening the holder;

Fig. 4 shows a cross section of the apparatus according to Fig. 1 upon a third step towards opening the holder;

Fig. 5a shows a cross section of the apparatus according to Fig. 1 upon a fourth and final step towards opening the holder;